Muscle stimulation for the prevention of venous stasis during surgery

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MUSCLE STIMULATION FOR THE PREVENTION OF VENOUS STASIS DURING SURGERY

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Deep vein thrombosis is a major problem in the immediate post-operative phase following orthopaedic surgery, especially surgery involving the lower limbs. The venous flow rate is reduced while the patient is anaesthetised and this leads to venous stasis, which has been identified as an important factor involved in the formation of a thrombus.

In order that this might be prevented, a portable calf stimulator has been developed. This unit is easily applied and totally self contained. Two electrodes are attached to a non-conductive plastic case which contains the solid state circuitery and a rechargeable battery. The unit delivers a short pulse at a rate of 12/min. with the voltage variable from 70-100 volts. In position for use, the upper electrode lies distal to the popliteal fossa with the lower electrode over the initiation of the Achilles tendon. Such stimulation of the calf muscles causes them to contract helping push the blood up the deep calf veins towards the heart, thus preventing venous stasis.